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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/263,842	03/08/1999	TAKAAKI TERASHITA	IONPA-5001	2295

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EXAMINER

WU, DOROTHY

ART UNIT PAPER NUMBER

2615

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/263,842

Applicant(s)

TERASHITA, TAKAAKI

Examiner

Dorothy Wu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-38 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 6 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Because the applicant did not contest the office's use of Official Notice, the teaching that it is well-known in the art of image processing to process an image to have the widest dynamic range possible is held as prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 7/1, 9/1, 10, 16/10, and 18/10 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiota et al, U.S. Pub. No. 2002/0034336.

Regarding claim 1, Shiota teaches an image processing method of creating output image data for obtaining a reproduced image by executing image processing on digital image data obtained by a digital camera [0002], comprising:

a step of determining at first a density conversion condition for an image expressed by the digital image data, the density conversion condition being a first conversion function for density correction between the digital image data and the output image data to increase or decrease a density of a whole image by a predetermined value (brightness correction, according to setting of adjustment key 50) [0221, Figs. 11 and 14(b)];

a step of determining next a gradation conversion condition for the image expressed by the digital image data on the basis of the density conversion condition, the gradation conversion condition being a second conversion function for the density correction and gradation correction between the digital image data and the output image data to control gradations in a predetermined range of the density of the image (compression or expansion of a dynamic range while maintaining the intermediate gradation) [0224, 0232-0236]; and

a step of modifying the digital image data on the basis of the density conversion condition and the gradation conversion condition, thereby creating the output image data for obtaining the reproduced image (processing data using the LUT 52, MTX 54, and LUT 60).

Regarding claim 7/1, Shiota teaches the display of the image (Fig. 10). Shiota also teaches that the density conversion condition (brightness correction) is determined by the instruction inputted from outside (adjustment key 50 setting) [0221].

Regarding claim 9/1, Shiota teaches that during the expansion or compression, pixels are clipped to correspond to the reproducible area of the finished print [0231], which reads on the gradation conversion condition having a lower limit value.

Regarding claims 10, 16/10, and 18/10, because the methods corresponding to claims 1, 7/1, and 9/1 are taught, the apparatuses corresponding to the methods are also taught.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 3/1, 3/2, 4/3/1, 4/3/2, 7/2, 9/2, 11, 12/10, 12/11, 13/12/10, 13/12/11, 16/11, and 18/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al, U.S. Pub. No. 2002/0034336, in view of Kim, U.S. Patent 6,078,686.

Regarding claim 2, Shiota teaches an image processing method of creating output image data for obtaining a reproduced image by executing image processing on digital image data obtained by a digital camera [0002], comprising:

a step of separating the digital image data into density component data and color component data [0226];

a step of determining a density conversion condition for converting a density of the density component data, the density conversion condition being a first conversion

function for density correction between the density component data and a modified density component data to increase or decrease a density of a whole image by a predetermined value (brightness correction, according to setting of adjustment key 50) [0221, Figs. 11 and 14(b)];

a step of determining a gradation conversion condition for converting a gradation of the digital image data on the basis of the density conversion condition, the gradation conversion condition being a second conversion function for the density correction and gradation correction between the density component data and the modified density component data to control gradations in a predetermined range of the density of the image (compression or expansion of a dynamic range while maintaining the intermediate gradation) [0224, 0232-0236]; and a step of modifying the density component data in accordance with the density conversion condition and the gradation conversion condition (processing data using the LUT 52, MTX 54, and LUT 60).

Shiota teaches a signal converter 64 that converts the signals into signals suitable for display on the monitor [0294].

Shiota teaches the display of the image (Fig. 10), but does not explicitly teach a step of synthesizing the modified density component data with the color component data, thereby creating the output image data for obtaining the reproduced image. Kim teaches that density component data with the color component data are synthesized to produce RGB data (Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the practice of synthesizing density component data with the color component data taught by Kim with

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the practice of displaying corrected image data taught by Shiota to display a corrected color image.

Regarding claims 3/1 and 4/3/1, Shiota teaches the method of claim 1. See above. Shiota does not teach that the density conversion condition is determined based upon a mean value of the densities of the digital image data. Kim teaches that the characteristic value is a mean value of densities of the digital image data (col. 9, lines 29-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the practice of using average mean density as a characteristic for determining brightness correction taught by Kim in the brightness correction algorithm of Shiota. One of ordinary skill would have been motivated to make such a modification to increase or decrease the image brightness to a desired level.

Regarding claims 3/2 and 4/3/2, Shiota does not teach that the density conversion condition is determined based upon a mean value of the densities of the digital image data. Kim teaches that the characteristic value is a mean value of densities of the digital image data (col. 9, lines 29-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the practice of using average mean density as a characteristic for determining brightness correction taught by Kim in the brightness correction algorithm of Shiota. One of ordinary skill would have been motivated to make such a modification to increase or decrease the image brightness to a desired level.

Regarding claim 7/2, Shiota teaches the display of the image (Fig. 10). Shiota also teaches that the density conversion condition (brightness correction) is determined by the instruction inputted from outside (adjustment key 50 setting) [0221].

Regarding claim 9/2, Shiota teaches that during the expansion or compression, pixels are clipped to correspond to the reproducible area of the finished print [0231], which reads on the gradation conversion condition having a lower limit value.

Regarding claims 11, 12/10, 12/11, 13/12/10, 13/12/11, 16/11, and 18/11, because the methods corresponding to claims 2, 3/1, 3/2, 4/3/1, 4/3/2, 7/2, and 9/2 are taught, the apparatuses corresponding to the methods are also taught.

4. Claims 5/3/1, 5/3/2, 14/12/10, and 14/12/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al, U.S. Pub. No. 2002/0034336, in view of Kim, U.S. Patent 6,078,686, and further in view of Asada, U.S. Patent 5,875,262.

Regarding claim 5/3/1 and 5/3/2, Shiota in view of Kim teach the image processing methods according to claims 3/1 and 3/2. See above. Shiota in view of Kim do not teach that the characteristic value is a weighted mean value based on a weight coefficient determined by a color in each pixel of the digital image data. Asada discloses the calculation of a characteristic value of a weighted mean value based on a weight coefficient determined by a color in each pixel of the digital image data (col. 30, line 45-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the weighted mean value based on color disclosed by Asada with the image processing method disclosed by Shiota in view of Kim to make a

correction method whose density conversion condition is dependent upon color information in the digital image data. One of ordinary skill would be motivated to make this modification because the correction method would take color information specific to the image into account when modifying the density of the image.

Regarding claims 14/12/10 and 14/12/11, because the methods of claims 5/3/1 and 5/3/2 are taught, the apparatuses corresponding to the methods are also taught.

5. Claims 8/1 and 17/10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al, U.S. Pub. No. 2002/0034336, in view of well-known prior art.

Regarding claim 8/1, Shiota teaches the image processing method according to claim 1. See above. Shiota does not teach that the gradation conversion condition is determined so that a brightest area of the reproduced image becomes white or comes to have a density approximate to the white. However, the office takes Official Notice that it is well-known in the art of image processing to process an image to have the widest dynamic range possible. Therefore, it would have been obvious to one of ordinary skill to alter the method of Shiota so that the brightest area of the reproduced image becomes white or approximate to white.

Regarding claim 17/10, because the method of claim 8/1 is taught, the apparatus corresponding to the method is also taught.

6. Claims 8/2 and 17/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al, U.S. Pub. No. 2002/0034336, in view of Kim, U.S. Patent 6,078,686. and further in view of well-known prior art.

Regarding claim 8/2, Shiota in view of Kim teach the image processing method of claim 2. See above. Shiota in view of Kim do not teach that the gradation conversion condition is determined so that a brightest area of the reproduced image becomes white or comes to have a density approximate to the white. However, the office takes Official Notice that it is well-known in the art of image processing to process an image to have the widest dynamic range possible. Therefore, it would have been obvious to one of ordinary skill to alter the method of Shiota in view of Kim so that the brightest area of the reproduced image becomes white or approximate to white.

Regarding claim 17/11, because the method of claim 8/2 is taught, the apparatus corresponding to the method is also taught.

Allowable Subject Matter

7. Claims 6/1, 6/2, 15/10, and 15/11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not teach an image processing method of determining a density conversion condition for an image expressed by digital image data, the density conversion condition being a first conversion function to increase or decrease a density of a whole image by a predetermined value, determining a gradation conversion

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condition for the image expressed by the digital image data on the basis of the density conversion condition, the gradation conversion condition being a second conversion function to control gradations in a predetermined range of the density of the image, and modifying the digital image data on the basis of the density conversion condition and the gradation conversion condition, wherein a predetermined value is inputted and the gradation conversion condition hardens or softens a tone of the image on the basis of the predetermined value.

8. Claims 19-38 allowed. Reasons for allowance were disclosed in Paper No. 11.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dorothy Wu whose telephone number is 703-305-8412. The examiner can normally be reached on Monday-Friday, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dorothy Wu
DW
July 20, 2004


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